

REMARKS

Claims 1-6 are pending in this application, of which claim 1 has been amended. No new claims have been added.

Claim 1 stands objected to for an informality which has been corrected in the aforementioned amendments.

The Examiner has maintained from the previous Office Action the 35 U.S.C. §102(e) rejection of claims 1-6 as anticipated by Yanai.

Applicant respectfully traverses this rejection.

As noted in Applicant's last response, Yanai discloses a method and process for processing image signals in which charges in the pixels of a solid state image pickup device, which senses an object via a color filter, are processed by: first selecting a group of pixels in two horizontal lines from a group of at least three lines; adding together the charges in those corresponding pixels of the two horizontal lines which are diagonally adjacent to each other; and adding together the charges in those corresponding pixels of the two horizontal lines which are vertically adjacent to each other.

This is in contrast to the present invention as shown in FIG. 5, in which these specific charge additions are not shown. Furthermore, there is no disclosure in Yanai of a horizontal transfer pulse for transferring the pixel signals transferred by the vertical transfer pulse in a horizontal direction every time a vertical transfer corresponding to all of the plurality of horizontal pixel rows is performed.

In particular, Yanai discloses an imaging device that outputs pixel signals of the different color elements in a mixed manner. In contrast, in the present invention, the pixel signals according to the color elements of the N colors are respectively read-out from the N vertical pixel columns forming the pixel block, and the read pixel signals are transferred in the horizontal direction through the vertical transfer corresponding to the plurality of horizontal pixel lines forming the pixel block, and thus, the pixel signals

corresponding to the color elements of N colors are individually output independent from each other. That is, the transfer methods of the present invention and Yanai differ from each other, and such a difference also makes a difference in the complexity in the signal processing at the succeeding stage. That is, in the present invention, because the pixel signals corresponding to the color elements of N colors are individually output, the color separation becomes easier in comparison to Yanai.

In particular, paragraph [0035] discloses:

After that, as shown in FIG. 13, the signal charges are transferred in the vertical direction by an amount corresponding to two pixels or four electrodes thereby transferring the G and Mg signal charges to the horizontal charge transfer unit 3. As a result, Cy and G signal charges are added together and Ye and Mg signal charges are added together. Thus, signal charges of two pixels at diagonally adjacent locations are added together. A transfer pulse is then applied to the horizontal charge transfer unit 3 so as to output the added signal charges. FIG. 14 illustrates the state after the completion of the output of the added signal charges. If the signal output in the above process is denoted by S(odd), S(odd) is a sequence of (Cy+G) and Ye+Mg) periodically appearing in this order.

This is in contrast to the present invention, in which the pixel signals which were transferred by the vertical transfer pulse are not combined together in any way prior to the horizontal transfer operation.

Accordingly, claim 1 has been amended to recite this distinction. Applicant respectfully submits that this is not a new issue because the novelty of the horizontal transfer operation was argued in Applicant's previous response.

In view of the aforementioned amendments and accompanying remarks, claims 1-6, as amended, are in condition for allowance, which action, at an early date, is respectfully solicited.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

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Respectfully submitted,

By 

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